

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

For: Terra

Date: Sunday, September 02, 2018

NR 12-3 Production PJR

API# 05-045-23921-00

Sincerely,

Grand Junction Cement Engineering

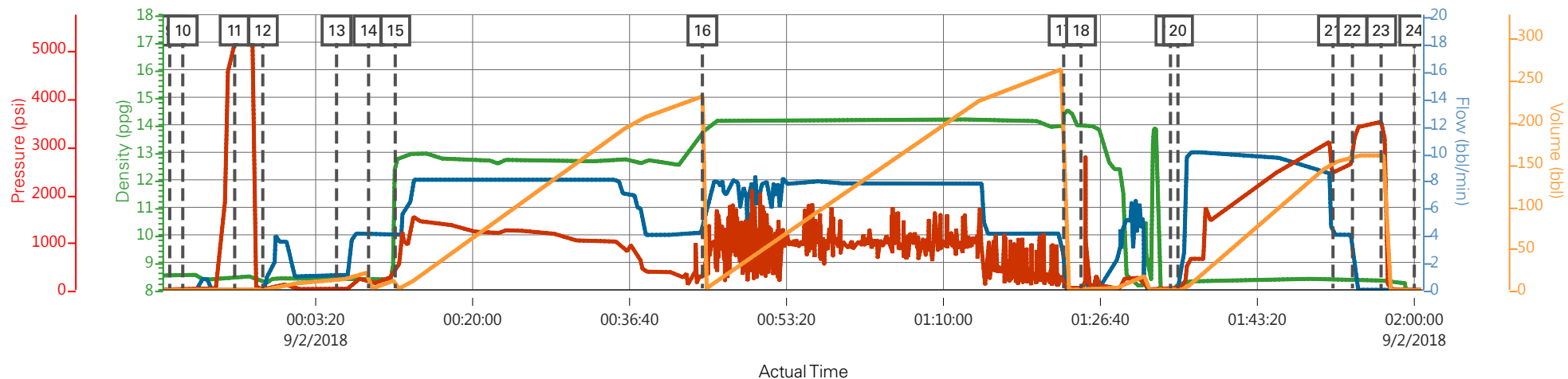
2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	9/1/2018	16:00:00	USER					Requested on Location @ 22:00
Event	2	Pre-Convoy Safety Meeting	9/1/2018	18:45:00	USER					
Event	3	Crew Leave Yard	9/1/2018	19:00:00	USER					1 Elite, 1 660, 1 pickup
Event	4	Arrive at Location from Service Center	9/1/2018	20:45:00	USER					Rig running casing
Event	5	Assessment Of Location Safety Meeting	9/1/2018	20:50:00	USER					JSA completed - Customer offered/received SDS - water test pH 7.0, CI <200, temp 68 degrees
Event	6	Pre-Rig Up Safety Meeting	9/1/2018	21:00:00	USER					1 hardline to standpipe, water hoses to upright, bulk hose to 660 and silos.
Event	7	Pre-Job Safety Meeting	9/1/2018	22:35:00	USER					All HES personnel, rig crew, and company rep
Event	8	Other	9/1/2018	22:35:01	USER					Rig Circulated 85 mins prior to cement job at 450 gpm 1130 psi
Event	9	Start Job	9/1/2018	23:47:50	USER	8.35	0.00	8.00	0.00	TD 10299', TP 10289', SJ 31.65', FC 10257.35' OH 8 3/4", Csg 4.5", 11.6 lb/ft, Mud 11.8 ppg. SCSG 9 5/8" 36# SET AT 1128'
Event	10	Prime Pumps	9/1/2018	23:49:13	COM5	8.34	0.80	33.00	0.00	Fresh Water
Event	11	Test Lines	9/1/2018	23:54:44	USER	8.50	0.00	5109.00	0.90	Held pressure 2 minutes no leaks
Event	12	Pump Mud Flush	9/1/2018	23:57:43	COM5	8.40	4.00	185.00	20.00	Mud Flush III
Event	13	Check Weight	9/2/2018	00:05:33	USER					Density Verified via Mud Scales

Event	14	Pump Water Spacer	9/2/2018	00:08:57	COM5	8.36	4.00	230.00	10.00	Fresh Water
Event	15	Pump Lead Cement	9/2/2018	00:11:47	COM5	12.70	8.00	1500.00	215.80	655SKS, 12.7PPG, 1.85CF/SK, 8.94GL/SK
Event	16	Pump Tail Cement	9/2/2018	00:44:24	USER	14.20	8.00	1200.00	224.00	740 SKS 14.2PPG 1.7CF/SK, 7.53 GL/SK
Event	17	Shutdown	9/2/2018	01:22:46	USER					Clean lines to pit
Event	18	Clean Lines	9/2/2018	01:24:37	USER					
Event	19	Drop Top Plug	9/2/2018	01:34:07	USER					Co-Rep Verify Plug Launched
Event	20	Pump Displacement	9/2/2018	01:34:54	USER	8.40	10.00	3074.00	158.90	3 lbs BE-6, 1 gal MMCR, 2% KCl Water
Event	21	Slow Rate	9/2/2018	01:51:22	USER	8.38	4.00	2419.00	149.70	Slow Rate 10 bbls to calculated displacement
Event	22	Bump Plug	9/2/2018	01:53:26	USER	8.33	4.00	2650.00	158.80	Plug Bumped at 2650 psi, Brought up to 3485 psi
Event	23	Check Floats	9/2/2018	01:56:28	USER	8.34	0.00	3485.00	158.80	Floats held – 2 bbl back to the truck
Event	24	End Job	9/2/2018	02:00:00	USER					Good returns throughout job. Pipe was reciprocated during job.
Event	25	Post-Job Safety Meeting (Pre Rig-Down)	9/2/2018	02:05:00	USER					All HES Present
Event	26	Pre-Convoy Safety Meeting	9/2/2018	03:15:00	USER					All HES Present
Event	27	Crew Leave Location	9/2/2018	03:30:00	USER					Thanks For Using Halliburton Cement. Andrew Brennecke And Crew.

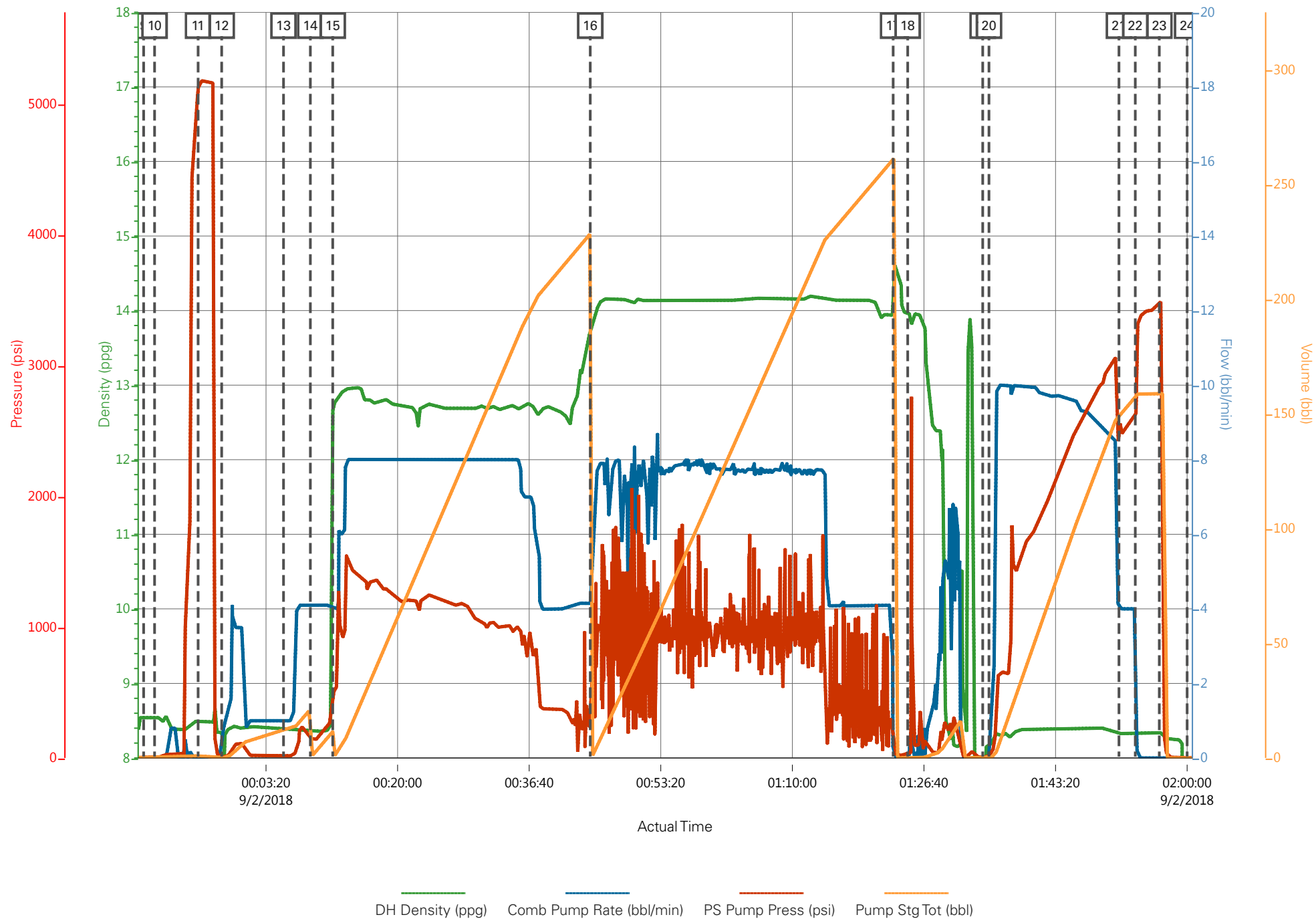
TERRA ENERGY - NR 12-3 - 4.5" PRODUCTION



— DH Density (ppg)
 — Comb Pump Rate (bbl/min)
 — PS Pump Press (psi)
 — Pump Stg Tot (bbl)

Description	Actual Time	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)
9 Start Job	23:47:50	8.55	0.00	8.00	0.00
10 Prime Pumps	23:49:13	8.54	0.00	8.00	0.00
11 Test Lines	23:54:44	8.50	0.00	5109.00	0.90
12 Pump Mud Flush	23:57:43	8.34	0.00	2.00	0.00
13 Check Weight	00:05:33	8.38	1.00	16.00	11.90
14 Pump Water Spacer	00:08:57	8.36	4.10	158.00	21.20
15 Pump Lead Cement	00:11:47	12.63	4.00	415.00	11.50
16 Pump Tail Cement	00:44:24	13.74	4.10	274.00	228.50
17 Shutdown	01:22:46	14.24	0.00	136.00	261.20
18 Clean Lines	01:24:37	13.96	0.00	41.00	0.00
19 Drop Top Plug	01:34:07	-0.33	0.00	-4.00	0.00
20 Pump Displacement	01:34:54	8.17	0.00	12.00	0.00
21 Slow Rate	01:51:22	8.32	4.00	2419.00	149.70
22 Bump Plug	01:53:26	8.33	4.00	2612.00	158.00
23 Check Floats	01:56:28	8.34	0.00	3485.00	158.80
24 End Job	02:00:00	-0.25	0.00	2.00	0.00

TERRA ENERGY - NR 12-3 - 4.5" PRODUCTION



Job Information

Request/Slurry	2497266/1	Rig Name	H&P 318	Date	27/AUG/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	NR 12-3

Well Information

Casing/Liner Size	4.5 in	Depth MD	10322 ft	BHST	121°C / 250°F
Hole Size	8.75 in	Depth TVD	9973 ft	BHCT	82°C / 180°F
Pressure	6281 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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Cement Information - Lead Design



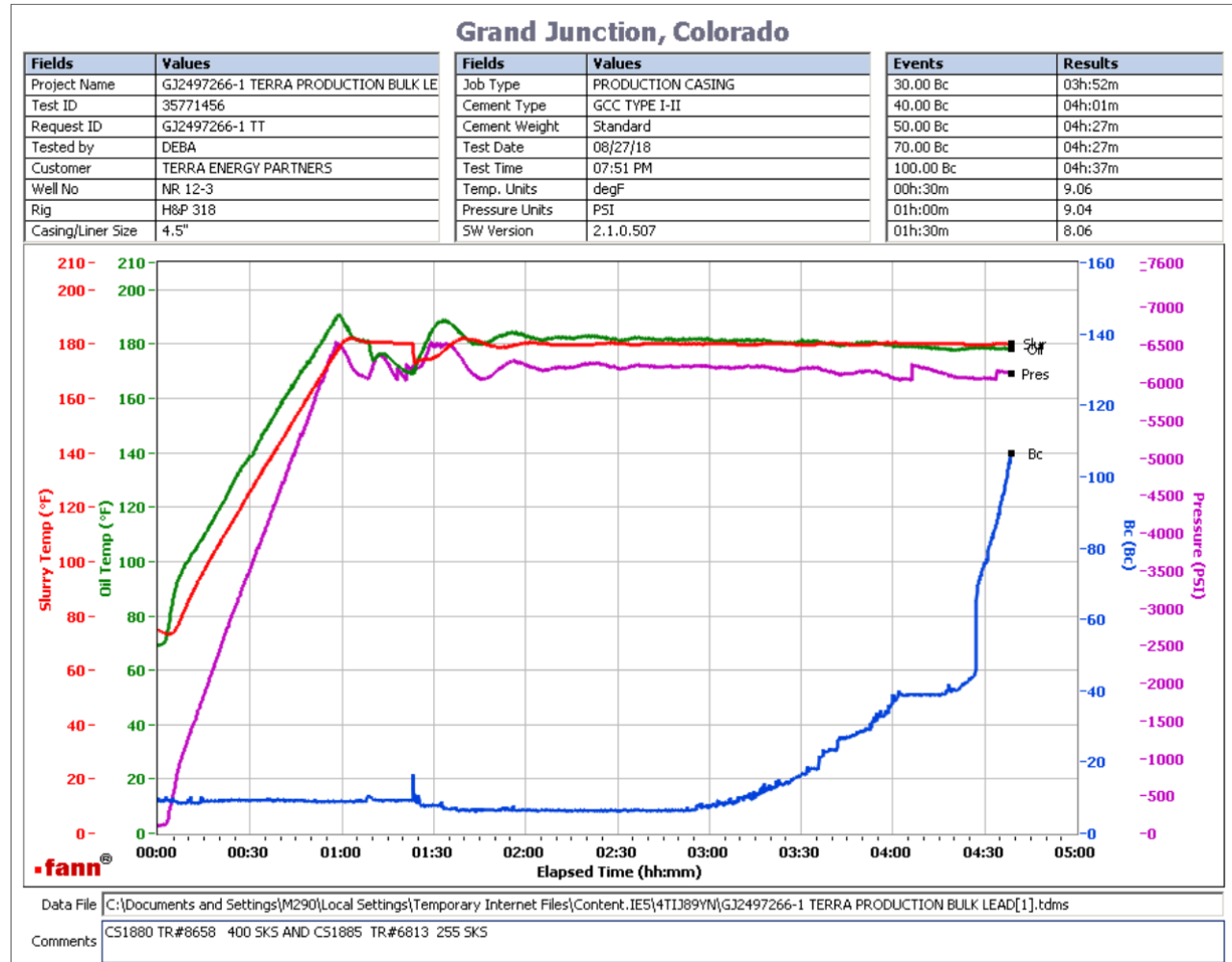
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		NeoCem Lead				Slurry Density	12.7	lbm/gal
						Slurry Yield	1.852	ft3/sack
						Water Requirement	8.959	gal/sack
						Total Mix Fluid	8.959	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

28/AUG/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
180	6281	58	3:52	4:27	4:27	4:37	9	68	15	12



Total sks = 655
 CS1880 TR#8658 400 SKS
 CS1885 TR#6813 255 SKS
 Deflection from graph 9-- > 12.

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Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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Cement Information - Tail Design



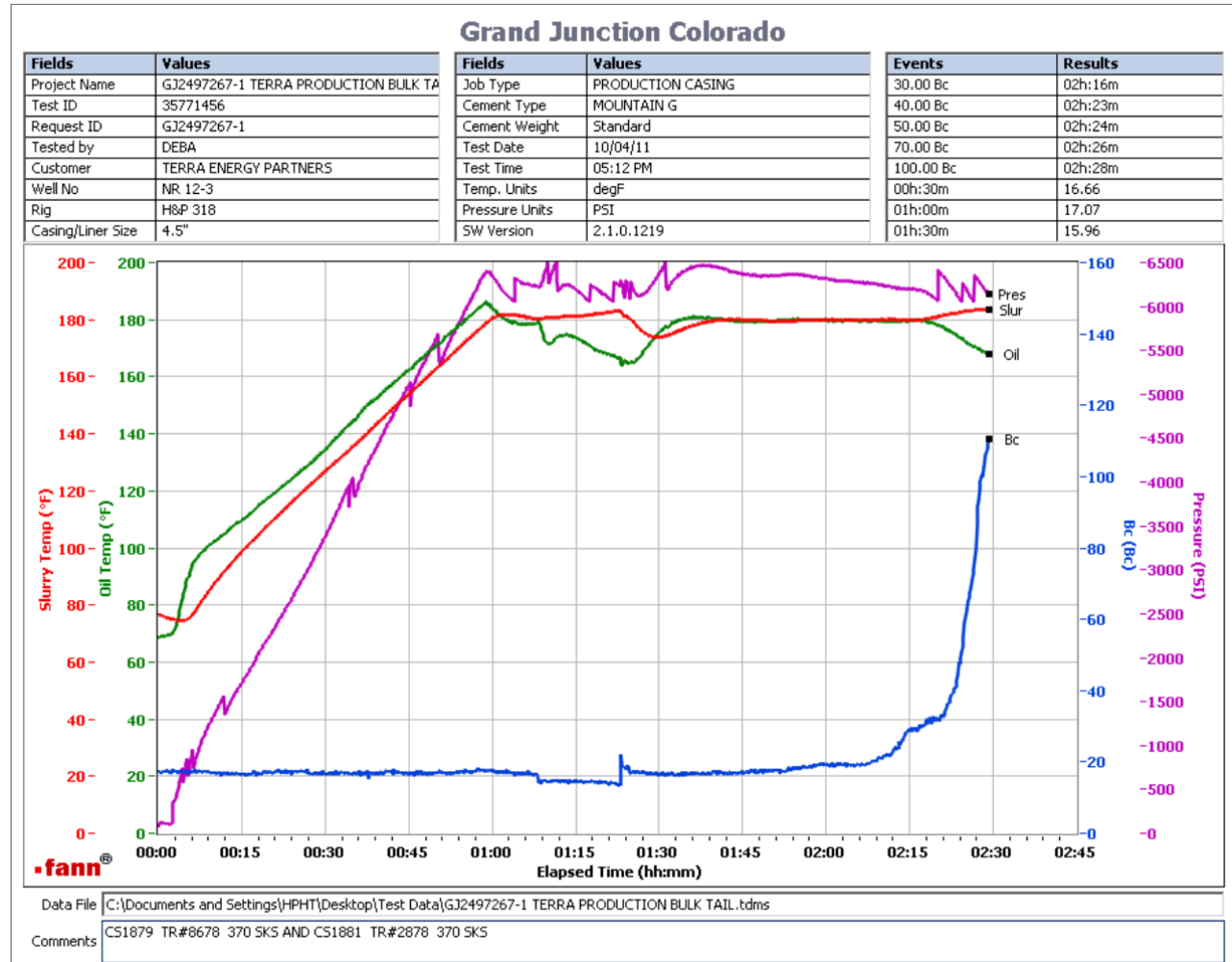
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		ThermaCem Tail				Slurry Density	14.2	lbm/gal
						Slurry Yield	1.704	ft3/sack
						Water Requirement	7.53	gal/sack
						Total Mix Fluid	7.53	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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28/AUG/2018

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180	6281	58	2:16	2:24	2:26	2:28	17	68	15	27



Total sks = 740

CS1879 TR# 8678 370 SKS

CS1881 TR# 2878 370 SKS

Deflection 13-- > 27-- > 18 after 1 minute. Please note heat of hydration started around 2:16.

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